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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,599	04/07/2005	Robert C. Guyer	D-4637	7165

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EXAMINER	
LEE, PATRICK J	

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 10/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/530,599	GUYER ET AL.	
	Examiner	Art Unit	
	Patrick J. Lee	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1 & 13 are objected to because of the following informalities:

In accordance with 37 CFR § 1.75(i), the elements of claims 1 & 13 should be set apart with indentations.

Also, with respect to claim 13, the elements are directed to steps for a method, which would be inconsistent with the claim of an apparatus.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, the phrase "without using a two field-of-view system" can be contradictory because it can be interpreted to mean that the system would not allow for two different fields of views. Such an interpretation would be contradicted by claim 2, where both a wide field of view and a narrow field of view is disclosed. It will be assumed that what applicant meant was that a system could have two fields-of-view, but could only have one system – not two separate systems for a narrow field of view and a wider field of view. As a result claim 2 and dependent claims 2-9 are rejected.

With respect to claim 2, "longer field of view" seems to be incorrect as it should probably read "longer focal length" in order to be consistent with the earlier portion of the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,770,850 to Bowen et al in view of "Understanding Camera Lenses" to Sean McHugh (http://www.cambridgeincolour.com/tutorials/camera-lenses.htm).

With respect to claim 1, Bowen et al disclose a device for tracking a light source (14) comprising: variable focal length lens (76) as a fixed optics having a variable focal length. Bowen discloses the use of longer focal lengths and shorter focal lengths (see

Bowen et al column 4, lines 24-36). However, Bowen et al does not explicitly disclose the fact that a longer focal length will lead to a smaller field of view and that a shorter focal length will lead to a larger field of view, McHugh discloses such in the section titled "Influence of Lens Focal Length". To modify the teachings of Bowen et al with those of McHugh would have been obvious to one of ordinary skill in the art in order to give the device taught by Bowen et al the versatility and flexibility to deal with different imaging situations. Also, while the modified Bowen et al does not explicitly disclose the application of the device to the field of tracking a threat using a directed countermeasure system, such would have been obvious to one of ordinary skill in the art as intended use because the device taught by Bowen et al is used to track light sources (14), which are what missiles essentially are as they are a source of radiation that eventually gets tracked by the device.

With respect to claim 2, the modified Bowen et al disclose the field of view of the fixed optics as being wide for a shorter focal length and a narrower field of view for a longer focal length.

With respect to claim 3, the modified Bowen et al does not explicitly disclose the object being magnified when in the narrow field of view over that object when off-axis, but such would be inherent from the device because if the object is off axis when the device is in the narrow field of view mode, the radiation from the object is not received by the device at all, so the object would not be magnified.

With respect to claim 4, the modified Bowen et al disclose the use of sensor array (34) as an IR focal plane array for imaging objects.

With respect to claim 5, the use of non-linear optics is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art because such would allow for the optical phase to be conjugated and create holograms that would be consistent with the target pattern optical element (32) (see Bowen et al column 3, lines 1-8).

With respect to claim 6, the modified Bowen et al does not explicitly disclose the use of Foveal optics, but such would have been obvious to one of ordinary skill in the art because such would allow for wide field of views necessary for the device to first identify the objects.

With respect to claims 7-9, the use of fixed optics to provide barrel or other distortion is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art because it would lead to image magnification decreasing with increasing distance from the optical axis – essentially a fisheye effect. Such would lead to a narrower field of view at an increased magnification.

With respect to claims 10 & 12, Bowen et al disclose a device for tracking a light source (14) comprising: variable focal length lens (76) as a fixed optics having a variable focal length. Bowen discloses the use of longer focal lengths and shorter focal lengths (see Bowen et al column 4, lines 24-36). However, Bowen et al does not explicitly disclose the fact that a longer focal length will lead to a smaller field of view and that a shorter focal length will lead to a larger field of view, McHugh discloses such in the section titled "Influence of Lens Focal Length". To modify the teachings of Bowen et al with those of McHugh would have been obvious to one of ordinary skill in the art in

order to give the device taught by Bowen et al the versatility and flexibility to deal with different imaging situations. Also, while the modified Bowen et al does not explicitly disclose the application of the device to the field of tracking a threat using a directed countermeasure system, such would have been obvious to one of ordinary skill in the art as intended use because the device taught by Bowen et al is used to track light sources (14), which are what missiles essentially are as they are a source of radiation that eventually gets tracked by the device. The use of non-linear optics is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art because such would allow for the optical phase to be conjugated and create holograms that would be consistent with the target pattern optical element (32) (see Bowen et al column 3, lines 1-8).

With respect to claim 11, the modified Bowen et al does not explicitly disclose the use of Foveal optics, but such would have been obvious to one of ordinary skill in the art because such would allow for wide field of views necessary for the device to first identify the objects.

With respect to claims 13-14, Bowen et al disclose a device for tracking a light source (14) comprising: variable focal length lens (76) as a fixed optics having a variable focal length. Bowen discloses the use of longer focal lengths and shorter focal lengths (see Bowen et al column 4, lines 24-36). However, Bowen et al does not explicitly disclose the fact that a longer focal length will lead to a smaller field of view and that a shorter focal length will lead to a larger field of view, McHugh discloses such in the section titled "Influence of Lens Focal Length". To modify the teachings of Bowen

et al with those of McHugh would have been obvious to one of ordinary skill in the art in order to give the device taught by Bowen et al the versatility and flexibility to deal with different imaging situations. Also, while the modified Bowen et al does not explicitly disclose the application of the device to the field of tracking a threat using a directed countermeasure system, such would have been obvious to one of ordinary skill in the art as intended use because the device taught by Bowen et al is used to track light sources (14), which are what missiles essentially are as they are a source of radiation that eventually gets tracked by the device.

With respect to claim 15, the modified Bowen et al disclose the use of sensor array (34) as an IR focal plane array for imaging objects.

With respect to claim 16, the use of non-linear optics is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art because such would allow for the optical phase to be conjugated and create holograms that would be consistent with the target pattern optical element (32) (see Bowen et al column 3, lines 1-8).

With respect to claim 17, the modified Bowen et al does not explicitly disclose the use of Foveal optics, but such would have been obvious to one of ordinary skill in the art because such would allow for wide field of views necessary for the device to first identify the objects.

With respect to claims 18 & 20, Bowen et al disclose a device for tracking a light source (14) comprising: variable focal length lens (76) as a fixed optics having a variable focal length. Bowen discloses the use of longer focal lengths and shorter focal

lengths (see Bowen et al column 4, lines 24-36). However, Bowen et al does not explicitly disclose the fact that a longer focal length will lead to a smaller field of view and that a shorter focal length will lead to a larger field of view, McHugh discloses such in the section titled "Influence of Lens Focal Length". To modify the teachings of Bowen et al with those of McHugh would have been obvious to one of ordinary skill in the art in order to give the device taught by Bowen et al the versatility and flexibility to deal with different imaging situations. Also, while the modified Bowen et al does not explicitly disclose the application of the device to the field of tracking a threat using a directed countermeasure system, such would have been obvious to one of ordinary skill in the art as intended use because the device taught by Bowen et al is used to track light sources (14), which are what missiles essentially are as they are a source of radiation that eventually gets tracked by the device.

With respect to claim 19, the modified Bowen et al does not explicitly disclose the use of Foveal optics, but such would have been obvious to one of ordinary skill in the art because such would allow for wide field of views necessary for the device to first identify the objects.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patrick J. Lee
Examiner
Art Unit 2878

PJL
October 25, 2006

Stephone B. Allen
Primary Examiner